

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

BARKER BRETTELL
138 Hagley Road
Edgbaston
Birmingham B16 9PW
UNITED KINGDOM

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference cdk2152	Date of mailing (day/month/year) 17/06/2004
International application No. PCT/GB2004/000056	International filing date (day/month/year) 12/01/2004
Applicant RHODIA CONSUMER SPECIALTIES LIMITED	<div style="border: 1px solid black; padding: 5px; text-align: center;"> RECORDS DEPT. SEEN BY: <i>DD</i> AGENT: <i>CDK</i> </div>

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No. 41 22 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Petronella Vaassen-Elsackers
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

JC20 Rec'd PCT/PTO 14 JUL 2005

PCT/GB2004/000056

Re Item V.

The following documents are referred to in this communication:

- D1: WO 02/08127 A (FIDOE STEPHEN DAVID ; JONES CHRISTOPHER RAYMOND (GB); RHODIA CONS SPEC) 31 January 2002 (2002-01-31)
- D2: US-B-6 180 0561 (COMSTOCK DANIEL L ET AL) 30 January 2001 (2001-01-30)
- D3: WO 99/33345 A (JONES CHRISTOPHER RAYMOND ; ALBRIGHT & WILSON UK LTD (GB); TALBOT ROBE) 8 July 1999 (1999-07-08)
- D4: WO 00/04777 A (ECC INT INC) 3 February 2000 (2000-02-03)
- D5: US-A-4 673 509 (DAVIS KEITH P ET AL) 16 June 1987 (1987-06-16)
- D6: EP-A-0 839 956 (ECC INT LTD) 6 May 1998 (1998-05-06)
- D7: US-A-3 597 251 (KAUFMAN DANIEL) 3 August 1971 (1971-08-03)
- D8: US-A-3 945 843 (HOLTY DAVID W ET AL) 23 March 1976 (1976-03-23)
- D9: EP-A-1 160 201 (HUBER CORP J M) 5 December 2001 (2001-12-05)
- D10: EP-A-0 491 391 (ALBRIGHT & WILSON) 24 June 1992 (1992-06-24)

1. Clarity and interpretation of the claims (Article 6 PCT)

1.1 Claim 18 is a so called omnibus claim which does not meet the requirements of Article 6 PCT in conjunction with Rule 6.2a.

In the following the claim is discussed in as far as it can be considered to cover the same subject-matter as claims 12-17, i.e. as if its scope was identical to that of independent claim 12.

1.2 Independent Claims 1 and 12 are not sufficiently supported by the description as required by Article 6 PCT, as their scope is broader than justified by the description. The term tetrakis(hydroxyorgano)phosphonium salt covers any salt of any tetrakis-organophosphonium cation having a hydroxy substituent. On one hand the invention is related to counteracting the negative influence THP salts may have on the rheological behaviour of slurries while on the other hand the nature of the organo group will be decisive for said influence on the rheological behaviour. The description demonstrates that dispersants specified in claim 1 can overcome the instant heterogenous thickening caused by tetrakis(hydroxymethyl)phosphonium sulphate (THPS). It does not support the assumption that said dispersants can actually overcome the alleged negative effect of any THP salt, having cations and/or anions of completely different character and complexity than THPS.

1.3 The wording of the independent method claim 12 seems not adequate in the light

of the description (Article 6 PCT). In a method directed to maintaining a slurry in a substantially homogenous phase the addition of THP salt would be superfluous since it does not contribute to the desired effect but on the contrary is detrimental. The method is rather one of minimising bacterial contamination of inorganic slurries (see the description page 1, lines 11-15). The method has compared with other methods using THP salts the advantage of maintaining the slurry in a substantially homogenous phase by suppressing the undesired side effects of THP salts on the homogeneity of the slurry (see the description page 1, lines 25-31).

2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-11 is not new in the sense of Article 33(2) PCT.

These claims relate to compositions comprising a tetrakis(hydroxyorgano)phosphonium salt and dispersants selected from four different classes. For assessing novelty of the compositions per se the indication of the intended use is only of relevance in as far as it implies that the composition has to be suitable for the indicated use.

Document D1 discloses (see the passages cited in the International search report) compositions comprising THP salts and aminophosphonate chelant to treat iron sulphide deposits. The aminophosphonate may for instance be amino (trimethylenephosphonate) which is synonymous to the nitrilo-tris-(methylenephosphonate) of claim 5 of the present application. The composition of document D1 may further comprise scale and corrosion inhibitors like polyacrylates and polyphosphates, which are dispersants of type (iii) and (iv) respectively of the present application and also non surfactant biopenetrants / hydrotropes known from D3, which are dispersants of type (ii).

Since the compositions of D1 seem suitable for treating inorganic slurries - in fact it is proposed in D1 to mix the compositions with solid carrier (e.g. silica, talc) - document D1 is considered to be novelty destroying for the subject-matter of claims 1-11.

Document D2 discloses (see the passages cited in the International search report) compositions for controlling "colloidal" and biological fouling comprising THPS and an antiscalant like polyacrylic acid or a phosphonate, e.g. amino tri(methylenephosphonic acid). This disclosure is for reasons analogous to those given above for document D1 considered to be novelty destroying for the subject-matter of claims 1-6, 9 and 10.

Document D3 discloses (see the passages cited in the International search report)

synergistic biocidal compositions comprising THPS and a non-surfactant penetrant / hydrotrope / syntan, like for instance polyacrylic acid, phosphono-polyacrylates or maleates (known from D10) for treating water in e.g. ceramic manufacture and surface coating. The compositions may for instance be added to aqueous based products, e.g. paints. The phosphono-polyacrylates or maleates known from D10 are dispersants of type (ii) of the present application. This disclosure is for reasons analogous to those given above for document D1 considered to be novelty destroying for the subject-matter of claims 1-3 and 7-10.

3. The present application does not meet the criteria of Article 33(1) PCT, because the subject matter of claims 1-18 does not involve an inventive step in the sense of Article 33(3)PCT.

3.1 Since the subject-matter of claims 1-11 is not new it cannot involve an inventive step.

3.2 The problem underlying the present application can be seen as providing a biocidal THP salt composition for treating inorganic slurries which do not lead to instantaneous heterogenous thickening and aggregation of the slurry and a corresponding method for minimising bacterial contamination of such slurries using said composition.

The proposed solution is characterised by the use of certain types of dispersants which apparently suppress the negative effect of THP salts on the homogeneity of such slurries.

The closest prior art is the known practice of adding THP salts to such slurries to which the description is referring (cf. page 1, lines 25-26) and for which document D4 is an example. Document D4 specifically proposes the use of THPS in synergistic mixture with peroxyacetic acid for slime control in paper making and for controlling bacterial and fungal growth in clay and pigment slurries (see D4, the passages cited in the international search report). Document D5 discloses a liquid scourer formulation comprising synthetic clay and calcium carbonate in combination with THPS, to which antiscaling agents like aminophosphonate and polyacrylates may be added.

The subject-matter of claims 12-18 and of claims 1-11, in as far as these claims cover subject-matter not already anticipated by documents D1-D3 cannot be considered to involve an inventive step.

The skilled person when preparing inorganic slurries with a high content of solids, for instance of calcium carbonate for coating paper, routinely adds dispersants in order to achieve a homogenous phase and to lower the viscosity. Documents D6-D9 (see the passages cited in the international search report) teach that dispersants of types (I)-(iv) specified the present application, which are also known as scale and corrosion inhibitors are suitable and in fact commonly used for this purpose.

Since it is also common practice to add THP salts as microbicidal agents to such slurries it was obvious for the skilled person that premixes comprising both the commonly used bactericide and a commonly used dispersant are an obvious alternative to adding these obligatory components separately. That THP salts are compatible with such dispersants was known from documents D1-D5.

To put it in another way: It was obvious for the skilled person that the compositions known from D1-D3 were suitable for a method of controlling bacterial contamination in inorganic slurry, and that due to the presence of dispersants known as such to stabilise high solid content inorganic slurries they would maintain the slurry in a substantially homogenous phase compared with adding THP salts alone. Furthermore with regard to the dispersants known from D10 one could even expect according to the teaching of document D3, that a synergistic effect with regard to the bactericidal effect would occur.

4. The subject-matter of claims 1-18 is considered to be industrially applicable (Article 33(1) and (4) PCT)